

## **2016 ANNUAL WEATHER SUMMARY FOR BAKERSFIELD AND FRESNO**

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### **Monthly Recap of Temperature and Precipitation Patterns in Bakersfield and Fresno During 2016:**

**January-** Well above average precipitation (around 170-200 percent of normal) and well above average temperatures (around 3 to 4 degrees higher than the 30-year average). Fewer than average foggy days (i.e., days with dense fog with ¼ mile or less visibility) in both Bakersfield (actual 6; normal 9) and Fresno (actual 5; normal 11). Only one day of freezing low temperatures (on the 1<sup>st</sup>). No thunderstorms reported in Bakersfield or Fresno. Fresno had its 9<sup>th</sup> wettest January on record at 4.42 inches; Bakersfield had its 15<sup>th</sup> wettest January on record at 1.95 inches.

**February-** Well above average temperatures (around 4 degrees above average) and well below average precipitation (less than 25 percent of average). Below average foggy days for Fresno (observed 2; average 4) and Bakersfield (observed 1; average 2). No thunderstorms reported in Bakersfield or Fresno.

**March-** Above average precipitation in Fresno; below average in Bakersfield. Above average temperatures. One dense fog day observed in Fresno; none in Bakersfield (one is average for both Bakersfield and Fresno). Two days with thunderstorms in Fresno (4<sup>th</sup>; 11<sup>th</sup>); none in Bakersfield.

**April-** Near to above average precipitation and above average temperatures. 3 thunderstorm days in Bakersfield (9<sup>th</sup>; 24<sup>th</sup>; 30<sup>th</sup>); 1 thunderstorm day in Fresno (22<sup>nd</sup>).

**May-** Near average precipitation and near average temperatures. Thunder reported in Bakersfield during the 5<sup>th</sup> and 6<sup>th</sup> (2 days). No days with highs of 100 degrees or warmer reported in Bakersfield and Fresno (average of 1 day for the month in both locations).

**June-** Well above average temperatures (around 4-5 degrees above average) and near to below average precipitation. (Average precipitation near zero to around 0.10 inch in most San Joaquin Valley locations). One day with thunder reported in Fresno (on 12<sup>th</sup>). Days with 100 degrees or higher in Bakersfield: 14 (average 6); Fresno: 15 (average 5). Bakersfield had its 6<sup>th</sup> warmest June on record, while Fresno had its 5<sup>th</sup> warmest.

**July-** Above average temperatures and average precipitation (Average precipitation near zero in the San Joaquin Valley). Days with 100 degrees or higher in Bakersfield: 15 (average 13); Fresno: 14 (average 14)

**August-** Above average temperatures; average precipitation (on average, these locations receive no measurable precipitation in the San Joaquin Valley). Days with 100 degrees or higher in Bakersfield: 13

(average 10); Fresno: 13 (average 11). Even the mountain and desert areas received almost no precipitation.

**September-** Near average temperatures (though behaved more like a roller coaster than during previous years). Well below average precipitation (average precipitation is around 0.10 to 0.20 inch). Strong thunderstorms impacted SE Bakersfield and Arvin/Lamont on 28<sup>th</sup>. (Average rainfall around 0.10-0.20 inch in SJ Valley). Days with 100 degrees or higher in Bakersfield: 4 (average 4); Fresno: 1 (average 4).

**October-** Significant precipitation during middle of month in Yosemite NP; but below average in Bakersfield and Fresno (thru 27<sup>th</sup>). Otherwise near average temperatures with brief periods of above average temperatures (highs in lower 90s on 8<sup>th</sup>-10<sup>th</sup> in Bakersfield. During that period, there was one day when the high reached 90 degrees or warmer in Fresno; high of 92 on 9<sup>th</sup>). Thunderstorms reported on 2 days in Fresno (23<sup>rd</sup>-24<sup>th</sup>) and once in Bakersfield (28<sup>th</sup>). No triple digit high temperatures reached this month at either Bakersfield or Fresno.

**November-** A very warm month due to persistent high pressure. Precipitation was variable, although most of the region received below average precipitation. A small area actually reported above average amounts for the month, such as the section of the San Joaquin Valley that had received rainfall on the 20<sup>th</sup>-21<sup>st</sup> plus additional rainfall associated with the system during the 26<sup>th</sup>-27<sup>th</sup>.

**December-** Mainly above average temperatures and precipitation. Some daily precipitation amounts reached record highs in both Bakersfield and Fresno. A heavy precipitation event occurred in the middle of the month and threatened to flood rivers in Merced and Mariposa Counties, including in Yosemite National Park due to high elevation rain (up to around 8,000 feet) falling on existing snowpack. Towards the end of the month (including the 23<sup>rd</sup>-24<sup>th</sup>, as well as the 30<sup>th</sup>-31<sup>st</sup>), Kern County received significant precipitation. Bakersfield had the 3<sup>rd</sup> wettest December on record as a result of this activity and rainfall accumulated during the first half of the month. Number of days with minimum temperature of below freezing was a little above average for Fresno (8 days observed, average of 6 days) and below average for Bakersfield (3 days observed; average of 6 days).

Overall, the year ended warmer than average and wetter than average. In terms of how warm it was this year, both Bakersfield and Fresno reached at least the fifth warmest year on record, and the last five years are now the warmest years on record. Precipitation was around 125 percent of normal for the calendar year in Fresno and 110 percent of normal for Bakersfield.

As a side note, mountain snowpack started above average in January in parts of the Sierra Nevada but ended below average in April. Snowpack was also below average by the end of December. In terms of the ongoing drought (since 2011), some improvement was observed, although mainly in Fresno County and northward. Above average precipitation was observed in 2016 in much of central California, except for the dry summer months and in February.

### **Highlights and Significant Weather Events in Bakersfield and Fresno during 2016:**

January 31 – Almost one inch of rain fell in both Bakersfield (0.93 inch) and Fresno (0.98 inch) that day; several inches of snow reported along Grapevine on I-5 and in Tehachapi along SR-58.

March 4<sup>th</sup> to 8<sup>th</sup> – Over 2 inches (2.20 inches total) of rain fell in Fresno, with 1.01 inches on the 8<sup>th</sup> alone.

March 11 – 45 mph gust reported in Bakersfield; 0.23 inch of rain also fell.

May 6 – Well above average precipitation for the month in Bakersfield due to thunderstorms on the 6<sup>th</sup> (0.52 inch reported that day; monthly average is only 0.18 inch). Showers also reported in Fresno with ponding on many roadways (0.14 inch of rain reported at Fresno-Yosemite International Airport but likely locally heavier throughout Fresno). Flooding reported on Grapevine along Interstate 5 and along Highway 198 in mountains and foothills west of Coalinga due to strong thunderstorms that produced heavy rainfall.

June 1<sup>st</sup> to 7<sup>th</sup> – First period this year with highs of 100 degrees or higher in Bakersfield and Fresno. No triple-digit high temperatures were observed this year prior to this date.

Jun 11<sup>th</sup> to 12<sup>th</sup> – Some isolated thunderstorms in Sierra Nevada during overnight/early morning hours; spread into San Joaquin Valley in the early morning hours of the 12<sup>th</sup>, including in Hanford.

Sep 30 – Last day of Water Year 2015-2016, or period that started on Oct 1, 2015. Fresno received 14.29 inches. This amount was 2.79 inches above the average of 11.50 inches. Bakersfield received 5.43 inches; amount was 1.04 inches below its average of 6.47 inches.

Oct 16 – First day of measurable precipitation since May 24<sup>th</sup> for Bakersfield. First significant precipitation at Yosemite Valley for Water Year 2016-2017 (that started on Oct 1, 2016).

Oct 17 – First day of measurable precipitation since June 12<sup>th</sup> for Fresno.

Oct 27<sup>th</sup> to 28<sup>th</sup> – First precipitation above 0.10 inch (0.15 inch for Bakersfield and 0.58 inch for Fresno) for Water Year 2016-2017. A thunderstorm was reported in Bakersfield on the 28<sup>th</sup>.

Oct 29<sup>th</sup> – First day of dense fog observed in San Joaquin Valley for the 2016-2017 cool season.

Nov 10<sup>th</sup> to 12<sup>th</sup> – A very warm period with much above average temperatures. Highs reached as warm as the 80s on the 10<sup>th</sup>, as well as on the 11<sup>th</sup>. In fact, widespread record highs were reached on the 11<sup>th</sup> with highs well into the 80s in the San Joaquin Valley. Very mild low temperatures also occurred on the morning of the 12<sup>th</sup>, such as lows in the mid to upper 50s in the San Joaquin Valley.

Nov 20<sup>th</sup> to 21<sup>st</sup> – Strong winds in Kern County mountains/desert; gusts to near 90 mph through the passes and canyons; around 60 mph in Mojave. Some reports of semi-trucks blown over on Highway 395 to the northwest of Inyokern and Highway 58 near Mojave. Also some significant rain, including reports up to around an inch, occurred along a stalled frontal boundary during much of the night on the 20<sup>th</sup> and into the morning of the 21<sup>st</sup>, including over parts of the San Joaquin Valley. This boundary formed a line of rain showers from around Fresno and extending to Lost Hills. This was an atypical pattern as quite a

few locations in central California did not receive any precipitation outside of this boundary which eventually weakened.

Nov 26<sup>th</sup> to 27<sup>th</sup> - First significant winter storm of the cool season (2016-2017). Snow levels as low as around 3,000 feet; snow amounts up to 19 inches reported around elevation 6,000-7,000 feet. Rain amounts up to an inch in the lower elevations, including the San Joaquin Valley. Snow disrupted holiday travel during the afternoon of the 26<sup>th</sup> as it fell on the passes in Kern County (including Tehachapi and the Grapevine).

Dec 7<sup>th</sup> – Fresno had its first day of freezing temperatures (low was 32 degrees) for the cool season of 2016-2017.

Dec 15<sup>th</sup> to 16<sup>th</sup> – Heavy rain event over much of the central CA interior. Record high rainfall for the 15<sup>th</sup> reached at Fresno (1.42 inches), Hanford (0.77 inch), Madera (0.79 inch), and Merced (0.60 inch). Rainfall amounts exceeded six inches in some portions of the Sierra Nevada in a 24-hour period, especially near the south entrance of Yosemite NP.

Dec 18<sup>th</sup> to 20<sup>th</sup> – A cold, dry airmass was in place; many locations in the San Joaquin Valley dropped below freezing during the nights and mornings. On the 18<sup>th</sup>, Bakersfield had its first day of minimum temperature of 32 degrees Fahrenheit or lower (observed low was 32 degrees). Bakersfield and Fresno both reached their lowest temperatures of December 2016 on the 20<sup>th</sup> (30 degrees Fahrenheit).

Dec 23<sup>rd</sup> – Record high rainfall at Bakersfield Meadows Field Airport (0.90 inch) - old record for the date was 0.76 inch in 1957. Hanford Municipal Airport had a new record high amount of rainfall of 0.52 inch (old record of 0.45 inch set in 2012). Precipitation fell mainly over Tulare and Kern Counties.

Dec 24<sup>th</sup> – During the early morning and on the following evening, Interstate 5 was shut down up to several hours each time due to snow-covered roads on the Grapevine around Lebec and Tejon Pass as cold air from the previous day's storm moved southward.

Dec 30<sup>th</sup> – Record high daily rainfall fell in Bakersfield (0.44 inch observed; record was 0.40 inch for the date in 1952) as a low pressure system moved inland over southern California.

Night of Dec 30<sup>th</sup> until the night of the 31st – Dense fog developed during the evening of the 30<sup>th</sup> due to remaining moisture from the previous day. Fog persisted into the morning hours of the 31<sup>st</sup> in a few areas, including south of Bakersfield. On the morning of the 31<sup>st</sup>, dense fog caused a 30-vehicle pile-up at the base of the Grapevine on Interstate 5 in Kern County. Later, or by the late afternoon into the evening of the 31<sup>st</sup>, snow began to fall in the mountains in much of Kern County at an elevation as low as 2,500 feet. Several inches of snow fell on Interstate 5 through the Grapevine, including in Lebec, and the freeway was once again shut down for several hours. Most of the precipitation fell in Kern County, especially during the afternoon and evening of the 31<sup>st</sup>.

## Graphical Climate Summaries for Fresno and Bakersfield:

